<u>**Amendments to the Claims:**</u>

This listing of claims will replace all prior versions, and listings, of claims in the application:

<u>**Listing of Claims:**</u>

Claim 55 (previously presented):    A computer program product encoded in computer readable media, the computer program product comprising:

first instructions, executable by a processor, for receiving input information regarding damaged vehicle components for at least one vehicle;

second instructions, executable by the processor, for categorizing damage zones with respect to the location of the bumper of a vehicle;

third instructions, executable by the processor, for categorizing at least one damaged vehicle component with respect to its location on the vehicle; and

fourth instructions, executable by the processor, for estimating change in the vehicle's velocity as a result of a collision based on the damaged vehicle components information.


Claim 56 (currently amended):    A computer system comprising:

a processor;

computer readable medium coupled to the processor;

first computer code, encoded in the computer readable medium and executable by the processor, for generating a first graphical user interface, wherein the first graphical user interface includes a first screen object representing a vehicle, a second screen object having data entry fields to allow entry of damaged vehicle components and repair/replace estimate information;

second computer code, encoded in the computer readable medium and executable by the processor, for generating a second graphical user interface, wherein the second graphical user interface includes a third screen object representing the vehicle, and a fourth screen object having data entry fields to allow entry of damaged vehicle components and visual damage information;

third computer code, encoded in the computer readable medium and executable by the processor, for rating damage severity of each vehicle component according to a set of predetermined rules;

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fourth computer code, encoded in the computer readable medium and executable by the

        processor, to determine an overall damage rating for the vehicle based on rated

        damage to the vehicle components; and

fifth computer code, encoded in the computer readable medium and executable by the

        processor, to compare the overall damage rating for the vehicle to a crash test

        vehicle having an overall rating based on component damage rates in accordance

        with the set of rules; and

sixth computer code, encoded in the computer readable medium and executable by the

        processor, for estimating change in the vehicle's velocity as a result of a collision,

        the change in the vehicle's velocity being based on the damaged vehicle

        components and the component damage ratings.


Claim 57 (previously presented):    A computer-implemented method for estimating the change in velocity of a vehicle as a result of a collision, the method comprising:

(a)      acquiring information regarding damaged components of at least one vehicle;

(b)      assigning a damage rating to the at least one vehicle;

(c)      determining whether to utilize crash test data for a first estimate of the change in velocity for the at least one vehicle based at least partially on the damage rating;

(d)      determining a second estimate of the change in velocity for the at least one vehicle based on conservation of momentum;

(e)      determining a third estimate of the change in velocity for the at least one vehicle based on deformation energy; and

(f)      determining a final estimate of the change in velocity for the at least on e vehicle based on at least one of the first, second, and third estimates of the change in velocity.


Claim 58 (previously presented):    The computer-implemented method of claim 57, wherein said final estimate is determined as a weighted combination of said first estimate and said third estimate.

Claim 59 (previously presented): The computer-implemented method of claim 58, wherein said weighted combination is based upon a correlation between said crash test data and said at least one vehicle.

Claim 60 (previously presented): A computer-implemented method, comprising:

receiving a damage rating for a subject vehicle, said damage rating comprising one of a plurality of preselected levels;

comparing said damage rating to a crash test damage rating to determine compliance with a predetermined rule, said crash test damage rating associated with a crash test vehicle related to said subject vehicle; and

estimating a change in velocity of said subject vehicle using data from said crash test vehicle if said comparing indicates compliance with said predetermined rule.

Claim 61 (previously presented): The computer-implemented method of claim 60, further comprising performing said estimating iteratively to obtain a population of said change in velocity.

Claim 62 (previously presented): The computer-implemented method of claim 61, further comprising providing said population of said change in velocity to a change in velocity combining module.

Claim 63 (previously presented): The computer-implemented method of claim 60, wherein said plurality of preselected levels comprise values in accordance with severity of component damage.

Claim 64 (previously presented): The computer-implemented method of claim 63, wherein said severity is determined with reference to repair/replace estimate information.

Claim 65 (previously presented): The computer-implemented method of claim 60, wherein said predetermined rule comprises whether said crash test damage rating is greater than said damage rating.

Claim 66 (previously presented): The computer-implemented method of claim 60, wherein said crash test vehicle is identical to said subject vehicle.

Claim 67 (previously presented): The computer-implemented method of claim 60, wherein said crash test damage rating is derived from at least one of IIHS or CR crash test data.

Claim 68 (previously presented): The computer-implemented method of claim 60, further comprising evaluating injury potential for an occupant of said subject vehicle based on said change in velocity.

Claim 69 (previously presented): A computer-implemented method, comprising:
calculating a first change in velocity for a first vehicle using a first crash test change in velocity for a second vehicle, said first and second vehicles being involved in a collision;
calculating a second change in velocity for said second vehicle using a second crash test change in velocity for said first vehicle;
determining which of said first change in velocity and said second change in velocity are in closer agreement with said second crash test change in velocity and said first crash test change in velocity, respectively; and
selecting one of said first crash test change in velocity and said second crash test change in velocity for further processing based on which is in said closer agreement.

Claim 70 (previously presented): The computer-implemented method of claim 69, wherein said further processing comprises combining said selected crash test change in velocity with at least one other estimate of change in velocity regarding said collision.

Claim 71 (previously presented): The computer-implemented method of claim 70, wherein said at least one other estimate is based on deformation energy.

Claim 72 (currently amended): The computer-implemented method of claim 70, further comprising evaluating injury potential for an occupant of one of said first and second

vehicles based on ~~said combined change in velocity~~ <u>one of said first change in velocity and said</u> <u>second change in velocity</u>.

Claim 73 (previously presented):    A computer-implemented method comprising:

obtaining damage information from a first vehicle and a second vehicle, said first vehicle and said second vehicle involved in a collision;

estimating deformation energy absorbed by said first and second vehicles during said collision based on said damage information;

estimating principal forces on said first and second vehicles during said collision based on stiffness parameters and crush depth for each of said first and second vehicles;

estimating a coefficient of restitution for said collision;

estimating a closing velocity between said first vehicle and said second vehicle; and

determining a change in velocity for said first vehicle and said second vehicle based upon said coefficient of restitution and said closing velocity.

Claim 74 (previously presented):    The computer-implemented of claim 73, further comprising obtaining a distribution of said change in velocity using a plurality of parameter combinations.

Claim 75 (previously presented):    The computer-implemented method of claim 74, wherein said parameter combinations comprise at least one of the following: vehicle weight, said stiffness parameters, said crush depth, and said coefficient of restitution.

Claim 76 (currently amended):    The computer-implemented method of claim 73, further comprising determining whether an ~~override/underrride~~ <u>override/underride</u> condition existed in said collision.

Claim 77 (previously presented):    The computer-implemented method of claim 76, further comprising adjusting said stiffness parameters if said override/underride condition existed.

Claim 78 (previously presented): The computer-implemented method of claim 73, further comprising evaluating injury potential for an occupant of one of said first and second vehicles based on said change in velocity of the respective one of the first and second vehicles.

Claim 79 (previously presented): The computer-implemented method of claim 73, further comprising adjusting said stiffness parameters for at least one of said first and second vehicles if said principal forces are not substantially balanced.

Claim 80 (previously presented): A computer-implemented method, comprising:

receiving a damage rating for a subject vehicle;

comparing said damage rating to a plurality of crash test damage ratings to determine compliance with at least one predetermined rule, said crash test damage ratings associated with crash test vehicles related to said subject vehicle; and

estimating a change in velocity of said subject vehicle using data from at least one of said crash test vehicles if said comparing indicates compliance with said at least one predetermined rule.

Claim 81 (previously presented): The computer-implemented method of claim 80, wherein the at least one predetermined rule comprises a best fit between said plurality of crash test damage ratings and said damage rating.

Claim 82 (previously presented): The computer-implemented method of claim 80, further comprising evaluating injury potential for an occupant of said subject vehicle based on said change in velocity.